

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>7755/MH</b>	<b>FOR FURTHER ACTION</b> see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. <b>PCT/US 00/ 23322</b>	International filing date (day/month/year) <b>25/08/2000</b>	(Earliest) Priority Date (day/month/year) <b>27/08/1999</b>
Applicant  <b>THE PROCTER &amp; GAMBLE COMPANY et al.</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.



It is also accompanied by a copy of each prior art document cited in this report.

## 1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.



the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing:



contained in the international application in written form.



filed together with the international application in computer readable form.



furnished subsequently to this Authority in written form.



furnished subsequently to this Authority in computer readable form.



the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.



the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

the text is approved as submitted by the applicant.



the text has been established by this Authority to read as follows:

**BLEACH BOOSTING COMPONENTS, COMPOSITIONS AND LAUNDRY METHODS**

5. With regard to the **abstract**,

the text is approved as submitted by the applicant.



the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

as suggested by the applicant.



because the applicant failed to suggest a figure.



because this figure better characterizes the invention.



None of the figures.

PATENT COOPERATION TREATY 27 AUG 2001

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# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 7755/MH	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/US00/23322	International filing date (day/month/year) 25/08/2000	Priority date (day/month/year) 27/08/1999
International Patent Classification (IPC) or national classification and IPC C07D223/16		
Applicant THE PROCTER & GAMBLE COMPANY et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 7 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand 15/11/2000	Date of completion of this report 24.08.2001
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Pentek, E Telephone No. +49 89 2399 8489 

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/US00/23322

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, pages:**

1-74 as originally filed

**Claims, No.:**

1-25 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).  
☐ the language of publication of the international application (under Rule 48.3(b)).  
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority in written form.  
☐ furnished subsequently to this Authority in computer readable form.  
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.  
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:  
☐ the claims, Nos.:  
☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/US00/23322

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

### 1. Statement

Novelty (N)	Yes:	Claims	5,9-15,16b,17-19,21
	No:	Claims	1-4,6-8,16a,20,22-24
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1-25
Industrial applicability (IA)	Yes:	Claims	1-15
	No:	Claims	

### 2. Citations and explanations see separate sheet

## VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:  
see separate sheet

## VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:  
see separate sheet

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

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International application No. PCT/US00/23322

**ITEM V:**

1. Reference is made to the following documents:

D1= WO 98 15535 A (NIPPON CATALYTIC CHEM IND ;TABUCHI SEIICHIRO (JP); KATSUMI IKUYO () 16 April 1998 (1998-04-16)  
D2= WO 95 28399 A (AQUINO CHRISTOPHER JOSEPH ;DEZUBE MILANA (US); GLAXO WELLCOME INC) 26 October 1995 (1995-10-26)  
D3= US 4 505 908 A (ZEUGNER HORST ET AL) 19 March 1985 (1985-03-19)  
D4= US 4 325 957 A (ZEUGNER HORST ET AL) 20 April 1982 (1982-04-20)  
D5= US 4 096 141 A (LIEPMANN HANS-GUNTHER ET AL) 20 June 1978 (1978-06-20)  
D6= US 4 595 531 A (MILKOWSKI WOLFGANG ET AL) 17 June 1986 (1986-06-17)  
D7= EP 0 004 024 A (KALI CHEMIE PHARMA GMBH) 19 September 1979 (1979-09-19)  
D8= BOEHME, H.; STOECKER, K. P.: "1,2,3,4-Tetrahydro-5H-2-benzazepine derivatives" ARCH. PHARM., vol. 306, no. 4, 1973, pages 271-274, XP002155381 Weinheim, Ger.  
D9= US 5 576 282 A (BURCKETT-ST LAURENT JAMES C T ET AL) 19 November 1996 (1996-11-19)  
D10=US 5 442 066 A (MADISON STEPHEN A ET AL) 15 August 1995 (1995-08-15)

2. Two claims 16 are present in the application. This inconsistency should have been removed. However, in order to distinguish these two claims in this communication, a small "a" is added to the first claim 16 (compound) and a small "b" is added to the second claim 16 (method).

3. A compound as specified in independent claims 16a and 20 is already known from documents D1 to D8; see claim 1 of each of documents D1 to D7 and on page 273 of D8.

Documents D1 to D5 also refer to a pharmaceutical composition comprising said compound and acceptable carriers; see claim 8 of D1, claim 15 of D2, claim 7 of D3, claim 18 of D4 and column 1, lines 33 to 37 of D5. Therefore, a composition comprising a compound as specified in present claim 1 is also known from these

documents.

The subject-matter of dependent claims 2 to 4, 6 to 8 and 22 to 24 is disclosed in at least one of D1 to D8.

In consequence, the subject-matter of claims 1 to 4, 6 to 8, 16a, 20 and 22 to 24 is not novel.

The subject-matter of claims 5, 9 to 15, 16b, 17 to 19 and 21 appears to be novel in view of the documents cited in the search report.

- 4.1. Documents D9 relates to the use of an aryliminium bleach boosters in bleaching compositions for providing effective bleaching in lower temperatures and improved color-safety profiles in laundry methods. The bleach booster is defined by a generic formula in column 5 under formula (I) and in column 9 under formula (VIII) wherein the two radicals  $R^1$  and  $R^2$  form part of a common ring. Preferably,  $R^1$  and  $R^2$  together may form the non-charged moiety as disclosed in column 6 under formula (III). The resulted preferred aryliminium bleach booster of D9 therefore differs from that used in the present invention only in that the heterocyclic ring is constituted with 6 atoms instead of 7 or 8. However, the teaching of D9 is not limited to this particular ring system, and according to the generic formula, a skilled person would in an obvious manner modify this preferred ring structure by increasing the number of the atoms of the heterocyclic ring (e.g. up to 7 or 8 atoms) without modifying the properties of the bleach booster.

Although, the present specification specify that the present bleach booster provides improved stability toward unwanted bleach boosting compound decomposition when combined with peroxygen compounds, this effect should also be provided in D9 as the main object in this document is to combine said bleach booster with a peroxygen source in a bleaching composition (claim 1). Moreover, no unexpected effect in term of bleach booster stability (in the presence of a peroxygen compound) has been shown in the present application for the present bleach booster when compared with a similar six atoms heterocyclic ring containing bleach booster as disclosed in D9.

Furthermore, this stability problem does not occur for a composition as specified in present claim 1 since the peroxygen source is only optional therein.

Therefore, the subject-matter of independent claims 1, 16a, 16b, and 20 does not involve an inventive step over the teaching of D9.

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

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International application No. PCT/US00/23322

- 4.2. The same reasoning applies for D10. Therefore, the subject-matter of independent claims 1, 16a, 16b, and 20 does also not involve an inventive step over the teaching of D10.
- 4.3. Dependent claims 2 to 15, 17 to 19 and 21 to 25 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the EPC in respect of inventive step since said additional features are either known from D9 and/or D10 or represent slight constructional changes which come within the scope of the customary practice of a skilled person.

**ITEM VII:**

5. The application number should have been replaced by its corresponding publication number on page 46, line 33.

**ITEM VIII:**

6. The objection raised under paragraph 2 above should have been removed and the rest of the claims renumbered.
7. The set of claims lacks clarity for the following reasons:
- a. the anion  $X^-$  is not defined in the claims; however, according to Article 34(2)(b) PCT, the clarification can only be made in the applicant's letter and not in the application;
  - b. radicals R are monovalent radicals; they cannot be selected from the groups of "keto", "alkylenes", "arylcarbonyls" and "oxygen" which are divalent radicals; this objection applies for claims 1, 4, 16a, 20, 21 and 22;
  - c. the term "about" used in the claims is vague and indefinite;
  - d. "a" cannot be 2 in claims 4, 6 and 21 because " $T_0$ " is only a divalent radical in these claims (and not a trivalent radical as it may be the case in claim 1); for the same reason, it appears that the oxaziridinium disclosed in claim 11 cannot have a net negative charge as it can only support one "Z" group (due to the bivalency of the group " $T_0$ ");
  - e. the wording "saturated or unsaturated" should be removed from claim 22 (page 88, line 6) as it does not appear in the corresponding part of claim 20 upon which claim 22 refers to;
  - f. claim 25 is not at its appropriate place.

**INTERNATIONAL PRELIMINARY  
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International application No. PCT/US00/23322

8. Wording such as "herein incorporated by reference" should have been removed from the description.
9. The vague and imprecise statement in the description on page 74, lines 9 to 12 and 20 to 23 implies that the subject-matter for which protection is sought may be different to that defined by the claims, thereby resulting in lack of clarity (Article 6 PCT) when used to interpret them (see also the PCT Guidelines, III-4.3a).

# INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 00/23322

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C07D223/16 C07D245/06 C07D498/04 C11D3/39

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C07D C11D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

INSPEC, EPO-Internal, WPI Data, PAJ, CHEM ABS Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 98 15535 A (NIPPON CATALYTIC CHEM IND ;TABUCHI SEIICHIRO (JP); KATSUMI IKUYO ( ) 16 April 1998 (1998-04-16) claims	1-4, 6-8, 16, 20, 22-24
X	WO 95 28399 A (AQUINO CHRISTOPHER JOSEPH ;DEZUBE MILANA (US); GLAXO WELLCOME INC) 26 October 1995 (1995-10-26) claims	1-4, 6-8, 16, 20, 22-24
X	US 4 505 908 A (ZEUGNER HORST ET AL) 19 March 1985 (1985-03-19)  claims column 3, line 35-37 column 9, line 25-32	1-4, 8, 16, 20, 22-24

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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

\* Special categories of cited documents:

\*A\* document defining the general state of the art which is not considered to be of particular relevance

\*E\* earlier document but published on or after the international filing date

\*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

\*O\* document referring to an oral disclosure, use, exhibition or other means

\*P\* document published prior to the international filing date but later than the priority date claimed

\*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

\*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

\*Z\* document member of the same patent family

Date of the actual completion of the international search

20 December 2000

Date of mailing of the international search report

05/01/2001

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# INTERNATIONAL SEARCH REPORT

International Application No

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 325 957 A (ZEUGNER HORST ET AL) 20 April 1982 (1982-04-20)  claims column 8, line 60 -column 9, line 20 -----	1-4,8, 16,20, 22-24
X	US 4 096 141 A (LIEPMANN HANS-GUNTHER ET AL) 20 June 1978 (1978-06-20)  claim 1 column 1, line 33-37 -----	1-4,8, 16,20, 22-24
X	US 4 595 531 A (MILKOWSKI WOLFGANG ET AL) 17 June 1986 (1986-06-17)  claim 1 column 1, line 64-68 -----	1-4,8, 16,20, 22-24
X	EP 0 004 024 A (KALI CHEMIE PHARMA GMBH) 19 September 1979 (1979-09-19) claim 1 -----	16,20, 22-24
X	BOEHME, H.; STOECKER, K. P.: "Über Derivate des 1,2,3,4,5-Pentahydro-2-benzazepins" ARCH. PHARM., vol. 306, no. 4, 1973, pages 271-274, XP000945065 Weinheim, Ger. the whole document page 273 -----	16,20,22
X	US 5 576 282 A (BURCKETT-ST LAURENT JAMES C T ET AL) 19 November 1996 (1996-11-19) the whole document -----	1-25
X	US 5 442 066 A (MADISON STEPHEN A ET AL) 15 August 1995 (1995-08-15)  column 2, line 8 -column 4, line 65 column 5, line 66 -column 9, line 49 -----	1-4, 9-21, 23-25

# INTERNATIONAL SEARCH REPORT

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International Application No

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International Application No

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 00/23322

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